

**CLAIMS**

1. A method for screening a DNA library comprising:

5           (i) providing a substrate for making electrophysiological measurements upon which at least one cell can be arranged;

10           (ii) providing at least one cell which expresses at least one heterologous DNA sequence;

15           (iii) arranging at least one cell on the substrate to permit detection and/or measurement of a change in the electrophysiology of the cell; and

15           (iv) identifying at least one cell of interest which shows at least one phenotypic change.

2. A method as claimed in Claim 1 wherein the method comprises the further step of isolating the cell of interest, and/or genetic material therefrom.

3. A method as claimed in Claim 2 wherein the method comprises the further step of isolating mRNA from the cell of interest identified in step (iii).

25           4. A method as claimed in Claim 3 wherein the method further comprises the step of sequencing the genetic material.

5. A method as claimed in Claim 4 wherein the method further comprises the step of storing or recording the sequence information on an information carrier, such as a computer disk.
- 5 6. A method as claimed in any preceding claim wherein a plurality of cells is provided in step (ii).
7. A method as claimed in any preceding claim wherein a plurality of cells is provided in step (ii), with each cell containing a different 10 heterologous DNA sequence.
8. A method as claimed in Claim 6 or 7 wherein the plurality of cells together comprises a DNA library of heterologous DNA.
- 15 9. A method as claimed in Claim 8 wherein the DNA library is a cDNA library.
10. A method as claimed in any one of the preceding claims wherein the change in the electrophysiology of the cell is detected and/or measured by 20 patch clamping.
11. A method as claimed in any preceding claim wherein the cell is treated with a test agent before step (iii).
- 25 12. A method as claimed in Claim 11 wherein the test agent is selected from at least one of the following: small organic molecules, small peptides, neurotransmitters, hormones and cytokines.

13. A method as claimed in any preceding claim wherein the cell is an animal cell.

14. A method as claimed in any preceding claim wherein the animal cell is selected from: Human Embryonic Kidney 293 (HEK293), Chinese Hamster Ovary (CHO), COS, MDCK, NG108, NIH3T3 or T84.

15. A method as claimed in any one of Claims 6 to 14 wherein the cells are arranged at spaced-apart locations in or on the substrate.